

## NOTES

*GENTIANA SETIGERA* IS THE CORRECT NAME FOR *G. BISETAEA* (GENTIANACEAE).—*Gentiana bisetaea* Howell (Fl. N.W. Amer., 445, 1901) is a localized but fairly well understood species found in *Darlingtonia* bogs and seeps on serpentine hillsides in southwestern Oregon. The type locality given by Howell is “. . . eastern base of the Coast Mountains near Waldo, Oregon,” the town of Waldo being a once-thriving gold-mining community in the southern part of the upper Illinois River Valley in Josephine County. Today the species is known from numerous bogs between Eight Dollar Mountain, 19 km N of Waldo, S to Gasquet Mountain, Del Norte Co., CA, and at scattered sites westward in the rugged Siskiyou Mountains to Curry Co., OR (files of Oregon Natural Heritage Data Base, Portland, and Siskiyou National Forest, Grants Pass). In 1941 M. E. Peck (Man. Higher Pl. Oregon, 1st ed., 558) synonymized *G. bisetaea* with *G. setigera* A. Gray, a California taxon, but in the second edition of his book (607, 1961) and in L. R. Abrams’ “Illustrated Flora of the Pacific States” (3:358, 1951) *G. bisetaea* is treated as a distinct species. Because of its restricted range and specialized habitat, this gentian has been considered for possible listing as an endangered or threatened species (R. J. Meinke, “Threatened and Endangered Plants of Oregon: An Illustrated Guide,” U.S. Fish & Wildlife Service, 160, 1982).

The name *Gentiana setigera* A. Gray, in the usage of California botanists, has for over 60 years been applied to quite a different species from *G. bisetaea* (see descriptions and illustrations in Jepson, Fl. Calif. 3:91, 1939; Abrams, loc. cit.; Munz, A California Fl., 442, 1959). However, in an unpublished manuscript, C. T. Mason, Jr. (1981) stated that *G. setigera* is actually the earliest name for *G. bisetaea*, and that a new name is needed for the species that has been confused with *G. setigera* in the various floras. In order to determine the correct application for the name *G. setigera*, we have reviewed pertinent literature and reexamined the holotype specimen (*Bolander*, No. 840 of the Kellogg and Harford distribution, GH!). Additionally, one of us (J.G.) visited the type locality (Red Mountain, Mendocino Co., CA) in company with Joann Holm, U.S. Bureau of Land Management, and collected a suite of specimens of the one *Gentiana* species found there (*Greenleaf 1458*, 4 Oct 1983, 2 sheets JEPS, 4 sheets OSC). We have seen only one further collection from the type locality (*C. P. Bonsall s.n.*, 1933, JEPS!). As discussed below, the critical morphological features of the holotype as well as the recently collected topotypes strongly support Mason’s contention that *G. setigera* and *G. bisetaea* are synonymous.

The misunderstanding by Jepson, Abrams, and others about the identity of *G. setigera* may have been due both to ambiguities in Gray’s published description of the taxon and to these authors’ unfamiliarity with the Oregon populations, named *G. bisetaea* by Howell. Gray’s original description in Latin (Proc. Amer. Acad. 11: 84, 1876) and his later ones in English (Synoptical Fl. No. Amer. 2[1]:121, 1878; Bot. Calif. 1:482, 1880) fit the Bolander type-specimen very well, except that they do not emphasize enough the strikingly decumbent stems and overlook entirely the tuft of basal rosette leaves. One oblanceolate, acute rosette leaf is nearly hidden by a stem but is at least 5 cm long; another one, clearly exposed, is 4 cm long and 1 cm wide. At least four more rosette leaves are present and are 2–3 cm long. A basal tuft of leaves from the caudex is very characteristic of *G. bisetaea* but is poorly developed in the plants previously assigned to *G. setigera*. The flowering stems of the Bolander type resemble *G. bisetaea* in having closely spaced and fairly numerous lower leaf-pairs, mostly with well-developed blades, with longer internodes distally and narrower-bladed leaves at the upper nodes. The lower cauline leaves have unusually broad blades (examples of length: width in cm are 2.0:1.5, 2.4:1.7, 2.3:1.6, 2.1:1.6), differing in this respect from the majority of *G. bisetaea* plants in Oregon. However,

the 1983 population sample from Red Mountain, while notably broad-leaved, includes some individuals that are indistinguishable from typical *G. bisetata* both in habit and in leaf shape.

Gray described the upper two pairs of stem leaves of *G. setigera* as forming an involucre to the solitary terminal flower. The 1983 collections from Red Mountain show this to be a variable trait, however; most plants have only the uppermost leaf-pair subtending the flower—as is typical of *G. bisetata*. The variation in form of the appendages of the corolla sinuses is identical in *G. bisetata* and *G. setigera*, both as described by Gray from the Bolander type and as noted in the 1983 samples from Red Mountain. We observed that the flowers of many plants on Red Mountain were paler blue than those in the Illinois Valley area, especially on the outer surface of the corolla.

Those gentians from northwestern California and adjacent Oregon, to which the name *G. setigera* has been misapplied, differ from the plants described above in having strictly erect or ascending stems, a poorly developed basal rosette, broad cauline leaves nearly alike (except the lowest 2–3 pairs) and at equally spaced nodes up the stem, often several flowers at the apex, and corolla sinuses often with more numerous capillary appendages. Further study may show these plants to be distinct from the closely related *G. calycosa* Grisebach and worthy of species status.

The Red Mountain population of *G. setigera* (= *G. bisetata*) is about 225 km south of the nearest sites in Del Norte Co. and southwestern Oregon. It occurs in a wet meadow on a serpentine ridge at ca. 1065 m elevation. As presently understood, this species is rare in California, and due to the misuse of its name for a different taxon, its listing in the “Inventory of Rare and Endangered Vascular Plants of California” (Smith and Berg, CNPS Spec. Publ. No. 1, 4th ed., 58, 1988) should be reevaluated. In Oregon *G. setigera* is threatened by prospective nickel mining, although due to economic considerations it seems unlikely that extraction and smelting of nickel ore will occur in the near future. The nomenclatural change from *G. bisetata* to *G. setigera* has little effect on the biological status of the species, as only a single widely disjunct population in California is being added to its previously known occurrences.

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INFRA-SPECIFIC NAME CHANGES IN *LIMNANTHES* (LIMNANTHACEAE).—In anticipation of a new edition of Jepson’s “Manual of the Flowering Plants of California”, it is necessary to make certain nomenclatural changes to provide uniformity throughout the genus *Limnanthes*.

The International Code (Voss, 1983, Regnum Veg. 111) provides no definitions for the taxa, subspecies and variety, and accordingly no distinction is made other than sequence if both are used.

At the time of my *Limnanthes* monograph (Mason, 1952, Univ. Calif. Publ. Bot. 25:455–512) I chose variety as the rank for the infraspecific taxa. In 1973 Arroyo (Brittonia 25:177–191) described several new taxa which she called subspecies. These appear to be taxonomically the same as my varieties. The following changes are made to elevate the several varieties to subspecies, and thereby standardize the taxonomy.

***Limnanthes douglasii* R. Br. subsp. *sulphurea* (C. Mason) C. Mason, stat. nov.**—*Limnanthes douglasii* var. *sulphurea* C. Mason, Univ. Calif. Publ. Bot. 25:477. 1952.

***Limnanthes douglasii* R. Br. subsp. *nivea* (C. Mason) C. Mason, stat. nov.**—*Limnanthes douglasii* var. *nivea* C. Mason, Univ. Calif. Publ. Bot. 25:477. 1952.

***Limnanthes douglasii* R. Br. subsp. *rosea* (Benth.) C. Mason, stat. nov.**—*Limnanthes rosea* Benth., Pl. Hartw. 302. 1848.